

# Java Language on .NET

# Agenda

- **Product description**
- **Product Preview**
- **Availability**
- **Q & A**

# Product Plan

- **Provide Java language on the .NET Platform**
- **Seamless upgrade path for Visual J++ Developers onto the .NET platform**
- **Java as a 1<sup>st</sup> class language in VS.NET**

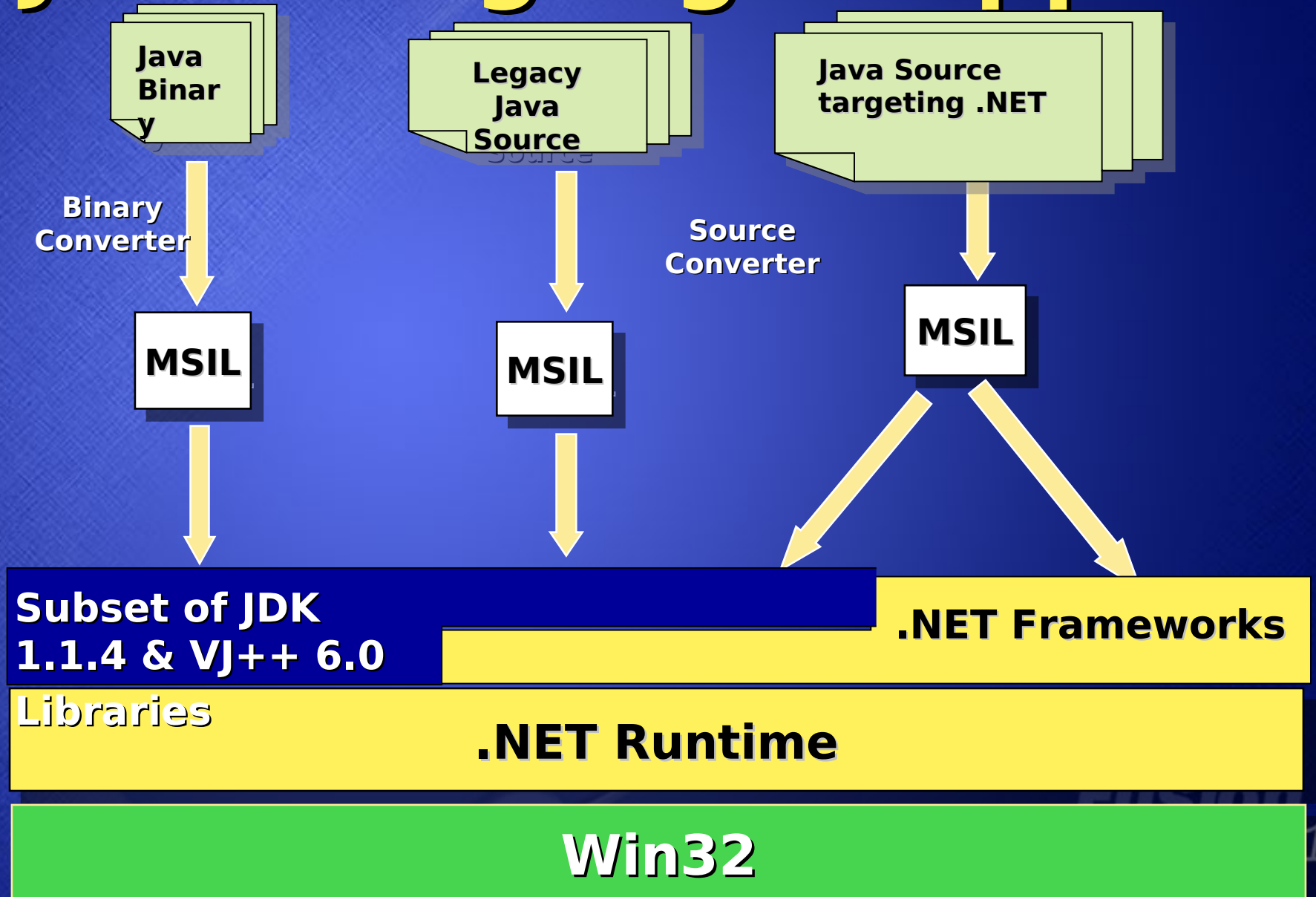
# Product Description

- **Java Language**
  - **Core Java programming Language**
  - **Java language converter**
- **Class libraries**
  - **JDK 1.1.4 (AWT, JDBC, Security, No JNI, no RMI )**
  - **MS extensions for Windows (JavaCOM, WFC)**
- **Java language IDE in VS.NET**



# Java Language demo

# Java Language Support



# Java language converter

- **Fully supports the Java language**
  - **Preserves language semantics**
- **Supports MS extensions for Windows**
  - **J/Direct, JavaCOM, Delegates etc.**
- **Fully supports consuming .NET Frameworks**
  - **CLS Compliant**

# **.NET Language extensions**

- **To be CLS compliant**
- **Syntax extensions required for CLS**
  - **ubyte**
  - **@attribute** - For attaching .NET attributes
- **Support for consuming .NET constructs:**
  - **Properties, Events, Delegates, Value types, Enums**



# Using .NET framework - 1

- **Properties - use property accessors**

```
form.setText("Hello");  
form.getText();
```

- **Delegates - Just create the delegate over a Java method**

```
// EventHandler is a .NET Delegate  
myHandler = new EventHandler(OnClickOK)
```

- **Events - use event accessors**

```
okButton.add_Click(myHandler);  
okButton.remove_Click(myHandler);
```

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**vision**  
2001

# Using .NET framework -

## 2 Attaching .NET attributes

```
/** @attribute WebMethodAttribute(true) */  
String GetStockQuote(String symbol)
```

- **Value types - Just use them as reference types**

```
DateTime dt = new DateTime();  
dt = DateTime.Parse("01/01/2002 12:00");  
System.Object obj = dt; // This boxes value type  
dt
```

- **Enumerators**

```
DayOfWeek friday = DayOfWeek.Friday;  
mySchedule.SetNonWorkingDay(friday);
```

# Consuming .NET Frameworks

**Demo**

# Java/COM and other extensions

## J/Direct

- `@dll.import`, `@dll.struct`, `@dll.structmap` etc.

## • JavaCOM

- `@com.class`, `@com.interface`, `@com.method`, `@com.register` etc.

## • Delegates

- `delegate`, `multicast delegate`

## • Conditional compilation

- `#if`, `#else`, `#error` etc
- `@conditional`



# JavaCOM demo

# JDK Class Libraries

- **As per JDK 1.1.4 Specs**
  - **No JNI and RMI**
- **Packages**
  - **lang, io, net, util**
  - **awt**
  - **sql, datatransfer, beans, text**

# AWT

- **Windowless implementation of awt components**
- **Solid Imaging performance**

# AWT demo



# Binary Converter

- Converts statically existing Java byte code in .class format to a .NET assemblies (in MSIL format)
- Useful when Java source is not available
  - Third party Java libraries in .class format

# Binary Converter Demo

# Java language IDE in VS.NET

- **Project system**
  - Full VS.NET project system
  - Upgrade VJ6 projects
- **Language services**
  - Designers - ASP.NET Web Forms, Web Services
  - Class View, Object Viewer
  - Intellisense
- **Debugger**
  - Java language exceptions

# **.NET Designers Demo**

**Web Forms**  
**Web Service**



# Debugger

- **.NET Debug Engine - Multi language debugging**
- **All features of VS.NET debugger are available to Java language programmers**
- **Full Support for Java language Exceptions**
- **Java language expression evaluator**
  - **Locals**
  - **Watch Window**

# Debugger Demo

- Debugging in Java language
- Java language exceptions
- Cross language debugging

# Availability

- Beta 1 in early Q3 of 2001
- Beta 2 in Q4 of 2001
  - Signup to the beta by visiting:  
[http://  
msdn.microsoft.com/visualj/jump/default.a  
sp](http://msdn.microsoft.com/visualj/jump/default.asp)
- Ship final release in Q1 2002
- Pricing announced later
- Further information contact -  
[\*\*tgoodhew@microsoft.com\*\*](mailto:tgoodhew@microsoft.com)

# Summary

- **Java Language on .NET platform**
- **Fully integrated into VS.NET - All .NET Designers**
- **Full support for .NET Frameworks**
- **Easy upgrade for VJ++ & Java-COM developers**



# Q & A

The Microsoft logo is centered on a solid blue background. The logo itself is white and consists of the word "Microsoft" in a bold, italicized sans-serif font, followed by a registered trademark symbol (®). There are faint, abstract white lines on the background, including a large curved line at the top and a smaller one at the bottom left with a circular end.

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# Java language on .NET

- **Object Hierarchy semantics**
  - **Java.Lang.Object Vs. System.Object**
  - **Exceptions (Catch and Throw)**
  - **Arrays**
  - **System.String Vs. java.lang.String**
- **Language semantics**
  - **Scoping rules**
  - **throws clause and checked exceptions**
- **Instruction semantics**

# **PowerPoint Template**

## **Subtitle color**

- **Select File/Save As**
- **Select File/Slide Setup choose On Screen Show**
- **See next slide for guidelines**



# Slide Guidelines

- Slides should emphasize key points
  - Limit to 6 lines per slides
  - Limit to 6 words per line
- Font, size, and color for text have been formatted for you in the Slide Master

Sample fill  
color

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